## ABSTRACT

A system and methods for scheduling execution of various types of processes. Using information gathered relating to the different processes, pre-run-time scheduling is integrated of run-time scheduling to guarantee that the executions of the processes will satisfy all the specified relations and constraints. Whenever a new set of processes arrives in the system, the system schedules their execution in two phases: a pre-run-time (off-line) phase performed by a pre-run-time scheduler, and a run-time scheduler.